

4.2 Transformations (key)

Odd answers only!

1. even

3. even

5. neither

7. neither

9. odd

11. even

13. even

15. neither

Show work on 17-20!

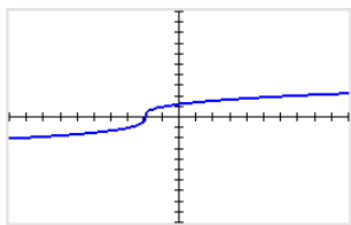
17. even

19. neither

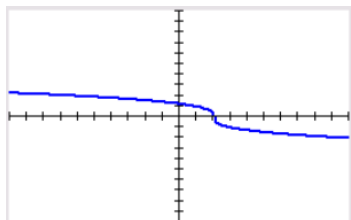
21. a) reflection across x-axis, b) vertical shrink by factor of $\frac{1}{2}$. c) vertical shift up 5

23. a) horizontal shift left 5, vertical shift down 1
b) horizontal shrink by $\frac{1}{2}$, vertical shift up 7 c)
vertical shrink by $\frac{1}{3}$, right 1

25.



27.



29. a) $-f(x) = -x^3 + 2x^2 + 3x - 5$

b) $f(-x) = -x^3 - 2x^2 + 3x + 5$

31. a) $-f(x) = -\sqrt[3]{27x}$

b) $f(-x) = \sqrt[3]{-27x}$

33. $y = x^3$, reflection across x-axis, right 4, down 2

35. $y = x^2$, reflection across x-axis, vertical stretch by 2, right 1, up 5

37. $f(x) = 2\sqrt[3]{x+3}$

39. $x - 7 + \frac{5}{x+5}$